

CA

Thermal stability of dicarboxylic acids V. V. Koshak
and S. V. Bogushin (Acad. Sci. U.S.S.R., *Phys. Chem.*
1964, No. 1, 108-110, 110-111) The
temp. for oxalic (100-180°), malonic (100-170°), suc-
cinic (200-320°), glutaric (200-320°), adipic (200-340°),
suberic (200-380°), azelaic (200-350°), and sebacic acid
(200-370°); β increases rapidly with the temp. The temps.
at the beginning of very steep increase of β , conventionally
termed the decompn. temps., are, in the above order, 160-
180°, 140-160°, 250-310°, 280-300°, 300-320°, 320-340°, 350-
370°. Acids with an odd no. of C atoms are less stable than
those with an even no. The kinetics of the decompn. of
adipic acid at 250-300° show linear increase of the fraction
decompd. with time; at 250°, 260°, 270°, and 280°, the slopes
of the straight lines are 0.044, 0.13, 0.358, 1.0 min.⁻¹. The
mean values of the 1st-order rate const. $\times 10^3$, $k = 0.0270$,
0.0448, 0.2277, 0.6016, and the activation energies 62.0
(250-300°), 57.0 (260-270°), 57.0 (270-300°). N. Thon

KORSHAK, V. V.

18476

USSR/Chemistry - Hydrocarbons

11 Feb 51

"Preparation of Hydrocarbons From Magnesium-Organic Compounds by Reacting the Latter With Hexachloroethane," V. V. Korshak, T. D. Kozarenko

"Dok Ak Nauk SSSR" Vol LXXVI, No 5, pp 685-687

Exand reaction $2RMgX + C_2Cl_6 \rightarrow R-R + C_2Cl_4 + 2MgClX$, discovered by Korshak (1939), on bromobenzene (I), p-bromotoluene (II), alpha-bromonaphthalene (III), ethyl bromide (IV), and methyl iodide (V). I yielded diphenyl, II ditolyl, III dinaphthyl, IV ethane and ethylene, V ethane and methane. On I, II, III, IV, V, and benzyl

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USSR/Chemistry - Hydrocarbons (Contd) 11 Feb 51

chloride, detd optimum conditions in regard to hydrocarbon yield and obtained yields of 33-79% based on RH_2 .

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Laws of the growth of the chain in polyesterification
 V. A. Korshak and S. V. Vinogradova (Acad. Sci. U.S.S.R.,
 Moscow) *Doklady Akad. Nauk S.S.S.R.* 77, 377 (1951)
 (1951) -The product of the polycondensation of hexamethylene glycol with sebacic acid at 200°, in a stream of N₂, after 0.5 hr., contained only 33% of the initial reactants, 60.9% of low-mol. polyesters (up to the trimer), and only 6.1% of polyesters with a mol. wt. of about 900 (trimer and higher); the low-mol. ester is a mixt. of HO(CH₂)₆CO(CH₂)₆COH, HO(CH₂)₆CO(CH₂)₆CO(CH₂)₆COH, and the dimer HO(CH₂)₆CO(CH₂)₆CO(CH₂)₆COH. After 1.5 hrs., the initial products constitute only 16.1%, the amt. of low-mol. polyesters falls to 37.1%, and that of high-mol. polyesters rises to 46.8%.

At this stage, formation of the polyesters takes place at the expense of both the monomers and the low-mol. polyesters. The importance of the growth through interaction of lower-mol. polymers increases with the progress of the process. After 3 hrs., this mechanism of chain growth becomes predominant, as evidenced by the fall of the amt. of the low-mol. polymer and of the amt. of free OH and COOH groups. At the end of 10 hrs., the mol. wt. of the polyester attains its max. value of about 3500, its yield is 90.1%, and the percentage of the low-mol. polyesters is only 3.0%. Further heating does not change the mol. wt. Heating at 200° 10 more hrs. under 2 mm. gave only an insignificant increase (450) of the mol. wt. Heating under the same pressure at 200° increased the mol. wt. by 1500. The kinetics of the polyesterification are best represented by a 2nd order law, with a rate const. of 0.16 min.⁻¹ at 200°. Although, at the late stages, further growth of the chain is due mainly to reactions between polymers, the presence of some amt. of monomer appears to be necessary for it; the growth comes to a halt when the monomer has disappeared altogether, thus, at 200°, after 9 hrs. Heating a completely polymerized mass 10 hrs. in vacuo produces a smaller increase of the mol. wt. than heating for the same length of time, without vacuum, a mass still contg. 1.4% sebacic acid. Consequently, the monomer appears to play the role of a catalyst of the polyesterification. This was demonstrated directly by expts. in which the finished polyester was heated with either of the monomers, or both, added. A further increase of the mol. wt. was observed only in the presence of added monomer; sebacic acid is more effective than HO(CH₂)₆OH, and an equimol. mixt. of both monomers is even more effective. Addn. of 0.5% camphorsulfonic acid produced an increase of the mol. wt. twice that obtained in 20 hrs. heating at 200°. One of the causes of the cessation of the growth of the mol. wt. is the consumption of the catalyzing monomer.

N. Thon

Chemical Abstr.
Vol. 48 No. 6
Mar. 25, 1954
Organic Chemistry

4

✓ Transarylation reaction. G. S. Kolesnikov, V. V. Korshak, and T. V. Smirnova. *Khim. i Fiz. Kinet. Vysokomolekul. Soedin.* *Jordishev, Dazhdy 7-oi Konf. Vysokomolekul. Soedineniyam*, 1952, 44-50. — The action of $AlCl_3$ on aromatic compounds. $Ar(CRR')_n$ leads to transarylation in which a low-mol. wt. aromatic hydrocarbon (such as C_6H_6) is eliminated and a high-mol. wt. hydrocarbon is formed. This reaction occurs with Ph_3CH , $MeCHPh$, $(CH_2)Ph$, CH_2CH_2Ph , $(CH_2CH_2)_2Ph$, and 1,2-bis(tetrahydro-2-naphthyl)ethane. The $(CH_2)_4$ and the $(CH_2)_6$ derivatives above form indan and tetrahydronaphthalene rings, resp., while other products form polymeric hydrocarbons. The 1st 3 substances also form varying amts. of insol. tridimensional polymer, formed by substitution and chain branching. The polymer from transarylation of $(CH_2)Ph$ is destructively acted upon by C_6H_6 in the presence of $AlCl_3$. Its mol. wt. declines and $(CH_2)Ph$ is formed. An increased amt. of C_6H_6 leads to greater destruction, as does an increased amt. of catalyst $AlCl_3$. G. M. Korolapoff

STREPIKHEYEV, Yu.A.; ORIOVA, I.A.; LOSSV, I.P.; KORSHAK, V.V.; BABKIN, B.M.;
DATSKOVICH, L.A.

Copolymerization reaction of diisocyanates with glycols. Khim. i Fiz.
Khim. Vysokomolekul. Soedineniy, Doklady 7-oy Konf. Vysokomolekul.
Soedineniyam '52, 59-67. (MIRA 5:7)
(CA 47 no.15:7820 '53)

KORSHAK, V. V., VINOGRADOVA, S. V.

High Molecular Weight Compounds

High molecular weight compounds. Part 43. The significance of acidolysis in the reaction of polyesterification. *Izv. AN SSSR. Otd.khim.nauk* No. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, September 1957, Uncl. 2

KORSHAK, V. V.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R00082492002

5064. Condensation reaction of V. A. STRELIKOV, L. A. GARDY, with glycols. V. A. STRELIKOV, L. A. GARDY, and I. P. IZSEV, V. V. KORSHAK, B. M. RABIN, and L. A. DATSEVICH. Khim. i. Fiz. Khim. Vysokomolekul. Soedineniyam 1953, 59-67; *Chem. Abstr.* 1953, 47, 7820. The copolymerization of diphenylmethylene diisocyanate with 1, 4-butanediol was investigated and an expression deduced for the mol.wt. of the product. The highest mol. wt. is attained near the equimolecular proportion of monomers. Addition of an alcohol or piperidine causes a severe drop in mol. wt. The viscosity of the mixture becomes constant after about 10 hrs. at 130° to 175° C. Tertiary amines catalyze the reaction, and the highest viscosities are produced in xylene or chlorobenzene solution. The product is a solid of mol. wt. up to 34,000, melting at about 162° and decomposing above 215° C.

*Rubber abstr.
V-31 Dec 1953
Synthetic Rubbers
and Like Products*

*AKC
1-27-54*

KORSNAK, V.V.

(4)
clean

Chem ab V48

1-25-54

Organic Chemistry

~~2,4-Dichlorostyrene~~ V. V. Korsnak and G. S. Kosolapoff
~~Ann. N.S.S.S.R., (Int. Div. Chem. Sci.)~~
~~Org. Synth. Coll. Vol. 3, 92-3 (1955); cf. Marvel, et al.,~~
~~C.A. 40, 4035.~~ Careful heating of 96.5 g. 2,4- $\text{Cl}_2\text{C}_6\text{H}_3\text{CH}(\text{OH})\text{Me}$ with 3 g. powd. KHSO_4 and 1 g. hydroquinone at
 80-100 mm. with a smoky flame (or metal bath) gives a dis-
 tillate which after drying with Na_2SO_4 in the presence of
 hydroquinone is fractionated, yielding 78-88% 2,4-dichloro-
 styrene (yield based on reacted carbinol; 37-40% yield is
 obtained on the carbinol actually employed), b. 80-1°, d.
 1.24. Iodometric detn. of unsatn. shows 96-8% purity of
 the product. G. M. Kosolapoff

ME
7-19-54

KORSHAK, V. V.

Chem Abs

V. 48 25 Jan 54

Organic Chem

1-(α -Phenylbenzyl)ethanol, V. V. Korshak and G. S. Kolesnikov, *Abstr. Nauk S.S.S.R., Div. Org. Chem., Siniy Org. Soedinenii, Sbornik 2*, 108-9 (1953); cf. Brooks, *C.A.* 48, 8207¹.—To 12.2 g. Mg in 250 ml. Et₂O is gradually added 78 g. MeI keeping the reaction within the limits of the condenser. After warming until complete reaction of Mg the flask is cooled, and with continued cooling and stirring 62 g. α -FC₆H₄CHO is added, after which the mixt. is refluxed 30-40 min., cooled and treated with 200 ml. 25-30% aq. NH₄Cl. The org. layer combined with Et₂O ext. of the aq. layer gives on distn., after drying, 78-83% α -FC₆H₄CHMeOH, b_m 119-20°, d₄ 1.122. G. M. K.

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C₆H₅

ME
1-27-54

KORSHAK, V. V. and GIHOVA, I. A.

"Certain Laws Governing the Reactions of Mutual Polymerization of Diisocyanates
With Glycols," DAN, No. 3, pp 397-400, 1952.

KORSHAK, V. V.

USSR/Chemistry - High Polymers,
Synthetic Fibers

May/Jun 52

"High-molecular Compounds. Part 44. Polyesters of
Some Aromatic Dicarboxylic Acids," V.V. Korshak,
T.A. Soboleva, Inst of Org Chem, Acad Sci USSR

"Iz Ak Nauk, Otdel Khim Nauk" No 3, pp 526-530

Obtained polyesters from ethylene glycol or di-
ethylene glycol and aromatic dicarboxylic acids.
Discusses the question of the effect of the chain
structure of the polymer on its phys properties.
The general idea of 3-dimensional polymers requires
correction. Gives the properties of the polyesters
obtained.

220T18

FORSHAK, V. V.

USSR/chemistry - High Polymers; Synthetic Fibers MAY/JUN 52

"High Molecular Compounds, Part 45. The Role of Decarboxylation of Dicarboxylic Acids in the Process of Polycondensation," V.V. Korshak, S.V. Rogozhin, Inst of Org Chem, Acad Sci USSR

"Iz Ak Nauk, Otdel Khim Nauk" No 3, pp 531-539

A method was developed for the detn of the thermal stability and of the kinetics of decompn of org carboxylic acids. The temps of decarboxylation were detd for oxalic, malonic, succinic, glutaric,

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adipic, suberic, azelaic, and sebacic acid. Decarboxylic acids with an odd number of C atoms decompose at lower temps than those with an even number of C atoms. Their thermal stability grows with the transition from lower to higher members of the homologous series. Decarboxylation exerts an appreciable neg effect in their polycondensation with bifunctional substances. The order of reaction and energy of activation were detd.

220719

1. KORSHAK, V. V., VINOGRADOVA, S. V.
2. USSR (600)
4. Molecules
7. High molecular weight compounds. Part 52. Reactions between polyester macromolecules.
Izv AN SSSR Otd khim nauk, No 6 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

- APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824920020
1. KORSHAK, V. V.
 2. USSR (600)
 3. High Molecular Weight Compounds
 4. Progress in the synthesis of high molecular weight compounds.
Usp. khim. No. 11 - 1952

9. Monthly list of Russian Accessions, Library of Congress, February, 1953. Unclassified.

KORSHAK, V.Y.

2

Chem. abs. 446

1-25-54

1-10-54

1-10-54

Fundamental laws of polycondensation V.Y. Korshak
Zh. fiz. khim. 21, 121 (1947) - A review of the
literature on the formation of polycondensates
in the reactions of polymerization

44

KORSHAK, V. V.

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4

Advances in the area of synthesis of high-molecular
compounds. V. V. Korshak, L. N. Gribova, and N. G.
Matyska, *Uspekhi Khim.* 41, 1339-82 (1982).—Review
with 811 references.
O. M. Kosolapoff

my

V.V. KORSHAK, T.D. KOZAPENKO

May 52

USSR?Chemistry - Hydrocarbons Polymerization Catalysts.

"Synthesis of Hydrocarbons by the Action of Hexachloroethane on Organo-Magnesium Compounds."
Inst. of Org. Chem., Acad Sci USSR

Zhur Obshch Khim Vol 22, No5, pp 771-773

The reaction leads to the formation of hydrocarbons which are dimers of the radicals that were contained in the organomagnesium compd. This applies only to aromatic radicals and to the methyl radical. In the case of ethyl magnesium bromide, very little butane is formed. The main product is ethylene with an admix of ethane. Organomagnesium compds are initiators for styrene polymerization, especially in presence of hexachloroethane.

263 T 26

KORSHAK, V.V.

Chemical Abst.
Vol. 48 No. 5
Mar. 10, 1954
Organic Chemistry

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⑤
Chem

Compounds of high molecular weight. XLVI. The polymerization of 2,6-dimethyl-4-tert-butylbenzene. V. V. Korshak and N. G. Vinogradova (D. I. Mendeleev Inst. Chem. Technol., Moscow). *J. Gen. Chem. U.S.S.R.* 22, 1211-3 (1952) (Engl. translation). XLVII. Mechanism of chain growth and causes of its stoppage in the process of reaction of polyesterification. V. V. Korshak and S. V. Vinogradova. *Ibid.* 1225-30. — See C.A. 47, 6883b. H. L. H.

MC
1-28-64

KORSHAK, V. V.

Card 1 of 2

USSR/Chemistry - Synthetic Fibers

Jul 52

"From the Field of Compounds of High Molecular Weight. XLVII. Concerning the Mechanism of Chain Growth in the Process of the Polyesterification and the Reasons for Its Cessation,"

V. V. Korshak, S. V. Vinogradova, Lab of High-Mol Comps, Inst of Org Chem, Acad Sci USSR

"Zhur Obshch Khim" Vol 22, No 7, pp 1176-1183

The kinetics of the reaction of polyesterification of hexamethylene glycol and sebacic acid was investigated under diverse conditions, and

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229T41

KORSHAK, V. V.

(2)

also in the presence of admixts of acid and glycol. It was found that at the beginning the fundamental tendency of the reaction was toward the interaction of the initial monomers with one another, with the formation of polyesters of low mol wt. But as the process advanced, the reaction of the moles of the polyester, with each other, gained continually of greater prominence, and toward the end this type of chain growth became predominant. It was found that the original monomers play a catalytic role in the process of polyesterification, and the velocity of the reaction diminishes according to the extent of their being spent, becoming virtually zero toward the end because of the absence of monomers. It was

229741

found that the addn of small amts of monomers to the polyester during the heating of the latter leads to a significant growth of its chain. The monomers, whose exhaustion plays a great role in disrupting the growth of the chain in the reaction of polyesterification, also play an essential catalytic role. It was found that the polyesterification of glycols with dicarboxylic acids proceeds as a reaction of the 2d order (following the initial reaction of hexamethylene glycol and sebacic acid).

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GTRSPV Vol. 5-No. 1 Jan. 1952

Korshak, V.V. and Matveeva, N.G. (D.I. Mendeleev Moscow Institute of Chemical Engineering); Steric hindrance in polymerization of 2,6-dimethyl-4-tertiary butylstyrole, 1145-8

Akademiya Nauk, S.S.S R., Doklady Vol. 78, No. 6

KORSHAK, V. V.

USSR/Chemistry - Plastics; Synthetic
Fibers 21 Jan 52

"Some Rules of the Copolymerization of Diisocyanates
with Glycols," V. V. Korshak, I. A. Gribova, Moscow
Chem-Techmol Inst imeni D. I. Mendeleev

"Dok Ak Nauk SSSR" Vol LXXXII, No 3, pp 397-400

4,4-Diisocyanatediphenylmethane $\overline{OCN(R)NCO}$ and
tetramethyleneglycol in nitrobenzene soln were re-
acted to obtain polyurethanes. At temps below 145°
and above 150° polyurethane of low mol wt is obtained,
while between 145-150° there is a max in mol wt.

211T33

Mol wt is lowered by starting with an excess of
either the glycol or the diisocyanate. Sepn of the
polymer by alc extraction results in lower mol wt
than that by steam distillation. Mol wt is also
lowered by addn of alcs or amines.

211T33

KORSHAK, V. V.

USSR/Chemistry - Synthetic Fibers, Plac - 1 Feb 52
tics

"The Significance of Exchange Reactions in the Process of Polycondensation," V. V. Korshak, G. M. Chelnokov, G. I. Distler, Inst of Org Chem, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXXII, No 4, pp 589-591

Studied products of polycondensation of sebacic acid with monoethanolamine (I) and N,N'-di (beta-hydroxyethyl-) sebacinamide (II). Electron diffraction pictures and other data showed that products from I and II were identical, proving that ex-

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change reactions must have occurred in the polycondensation. Drew up a scheme of polycondensation equilibria for the reaction between monoethanolamine and sebacic acid.

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KOLESNIKOVA, G. S.; KORSHAK, V. V.

Amination

Catalytic amination of cyclohexanol. Dokl. AN SSSR 85 No. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 195~~8~~, Uncl.
2

KORSHAK, V.V.

USSR/Chemistry - Rearylation

1 Jul 52

"The Reaction Mechanism of Rearylation of Diarylalkanes," G. S. Kolesnikov, V. V. Korshak, Inst of Org Chem, Acad Sci SSSR

"Dok Ak Nauk SSSR" Vol LXXXV, No 1, pp 95-98

The 1st step in rearylation of diarylalkanes is formation of a complex with the catalyst (aluminum chloride) which results in polarization of the diaryl bond. Such a complex can then hold several diaryl mols. At elevated temps, this complex decomposes with the sepn of benzene, after which the remaining double complex combines with another diaryl mol. Presented by Acad B. A. Kazanskiy 30 Apr 52.

224T12

(CA 47 no.15:7470 J3)

PA 227T11

USSR/Chemistry - Plastics, Polymer - 1 Aug 52

"The Effect of Stereochemical Factors on the Capacity of Substituted Ethylenes for Polymerization," V.V. Korshak, N.G. Matveyeva, Inst of Org Chem, Acad Sci USSR.

"Dok Ak Nauk SSSR" Vol 85, No 4, pp 797-800

Four groups of compounds were tested in regard to their polymerization capacity: (1) ethylene tetrahalides; (2) unsym disubstituted ethylenes with simple substituents; (3) ortho-substituted styrenes; (4) ortho-disubstituted alpha-methyl styrenes. The investigation established that steric factors play an essential role in determining the ability of many substituted ethylenes to polymerize. They have an especial significance in tetrasubstituted ethylenes, and it was also shown that they have an essential meaning in di- and even in some monosubstituted ethylenes. The results of the work also proved that the capacity of the substituted ethylene for polymerization is affected not only by the influence of the substituent on the activity and polarity of the double bond, but also by its purely spatial influence inhibiting and even preventing polymerization. Presented by Acad A.N. Nesmeyanov 5 Jun 52.

227T11

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CIA-RDP86-00513R000824920020-

British

B II

Aug. 1953

Plastics; Resins; Paints;
Surface Coatings

Experimental investigation of the distribution function of polymers by molecular weights. C. E. Bresler, V. V. Korshak, S. A. Matveyeva, and P. A. Fikhtengolts (C.R. Acad. Sci. - U.R.S.S., 1952, 87, 1081-1084). A new formula for the distribution function, $P_x = (2\pi x)^{-1} \exp(-[x - \bar{x}]^2/2\sigma^2)$, is evolved; P_x is the wt. fraction of the x -mers and \bar{x} and σ are polymerisation coeff. and average polymerisation coeff., respectively. Experimental data for the mol.-wt. distribution of polymers are obtained by the ultracentrifuge sedimentation method applied to all fractions of an polyamide dispersed in methanol. The experiments confirm the assumption of interaction and regrouping between polymer chains of different length, implicit in the evolved formula. S. K. Lachowicz.

ME
7-13-54

Inst. High Molecular Compds. AS USSR

KORSHAK, V. V.

KORSHAK, V.V.

[Methods of high molecular weight organic chemistry] Metody vysokomolekuliarnoi khimii. Vol. I. [General methods of synthesizing high molecular weight compounds] Obshchie metody sinteza vysokomolekuliarnykh soedinenii. Moskva, Izd-vo Akademii nauk. 1953. 666 p. (MLRA 7:5)

1. Akademiya nauk SSSR. Institut organicheskoy khimii. (Chemistry. Organic--Synthesis) (High molecular weight compounds)

KORSHAK, V. V.
KORSHAK, V. V.

"O Mekhanizme Reaktsii Polikondensatsii,"

XIIIth International Congress of Pure and Applied Chemistry,
XVIIth Conference of the UNION (IUPAC) Stockholm, Jul 29 - Aug 4 '53.
Uppsala Aug 5-7 '53.

KORSHAK, V.V.

①
Systematization of high-molecular weight compounds.
Nomenclature and classification of high-molecular weight
compounds. V.V. Korshak, *Izvest. Akad. Nauk S.S.S.R.,
Otdel. Khim. Nauk* 1953, 331-35.—The commonly employed
nomenclature of polymeric and high-mol. wt. substances is
critically discussed, with numerous references. A suggested
system divides the chain polymers into carbon-chain and
hetero-chain classes. The former are named by the stand-
ard nomenclature of the repeating units, with prefix poly
being followed by the name of the substituted (or unsub-
stituted) link unit, such as ethylene. The term polyvinyl is
thus abolished in polymer nomenclature. The unsatd.
polymers are similarly named by I.U.C. names of the re-
peating link units. The hetero-chain polymers, i.e. sub-
stances with atoms other than C in the main chain, are
named similarly. Thus polyethyleneglycol is named poly-
oxyethylene, and polycaprolactone is named polyoxy-
caproylene. Similar names are employed for polymers with
N or S atoms in the chain. G. M. Kosolapoff

KORSHAK, V. V.

258T11

USSR/Chemistry - High-Molecular Com-
pounds, Isotopes

Jan/Feb 53

"The Field of High Molecular Compounds. Report 51,
Investigation of the Exchange Reaction of Polyesters
With the Use of the Heavy Isotope of Hydrogen,"

D. N. Kursanov,¹ V. V. Korshak and ²S. V. Vinogradova,

³Inst of Org Chem, Acad Sci USSR

Iz Ak Nauk SSSR, OZhN, No 1, pp 140-144

The exchange reaction of polyhexamethylene sebaci-
nate with the diethyl ester of 2, 3-dideutero suc-
cinic acid was investigated. The occurrence of

258T11

exchange reactions in the process of polyesterifi-
cation was demonstrated. Such exchange reactions
take place because of the complex ester bonds. A
convenient method was developed to obtain the
diethyl ester of 2, 3-dideutero succinic acid.

KORSHAK, V. V.

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High-molecular weight compounds. LIII. Polycondensation of 1,3-dibromopropane with benzene. G. S. Kolesnikov and V. V. Korshak. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1953, 336-43; cf. *C.A.* 46, 7084g; 48, 5604a. — The reaction of C_6H_6 with $Cl(CH_2)_3Br$ is catalyzed not only by $AlCl_3$, but also by $AlBr_3$, $FeCl_3$, and $ZrCl_4$. Under comparable conditions the mol. wt. of the polyphenylpropyl product is resp. 3940, 2790, 2020, and 1360, with catalysis by $AlCl_3$, $ZrCl_4$, $AlBr_3$, and $FeCl_3$. The yield (55.7%) and the mol. wt. (3800) of the polymer with $AlCl_3$ catalysis are max. when 36 mole-% $AlCl_3$, relative to C_6H_6 , is employed. A lower proportion of catalyst gave lower yields and lower mol. wts. As the proportion of C_6H_6 in the mixt. is varied the following results are obtained: decrease of the C_6H_6 excess leads to a rise of polymer yield (max. at 30-50 mole-% excess), followed by a decline. The max. mol. wt. is reached with a moderate excess of C_6H_6 . As the C_6H_6 excess declines the formation of hydridene terminal groups is favored; this reaction is the reason for the cessation of chain growth. Oxidation with dil. HNO_3 , followed by $KMnO_4$, gave mainly p - C_6H_4 -(CO_2H)₂ and apparently p - C_6H_4 -(CH_2CO_2H)₂. Treatment of the polymer with gradually increasing amts. of $AlCl_3$ led to gradual destruction of the polymer with decreasing mol. wt. of the final product. G. M. Kosolapoff

KORSHAK, V. V.

USSR.

Mechanism of the Friedel-Crafts reaction. XI. Products of condensation of polyhalogenated ethylenes and ethanes with benzene. V. V. Korshak and K. K. Samoilovskaya (U. S. Merckle Chem. Technol. Inst., Moscow). *Sbornik Statei Vyshego Khim.* 2, 1020-6 (1953). Cf. C.A. 43, 2930d. C_2H_4 (11-12 moles) and 1 mole $AlCl_3$ refluxed 1-2 hrs. with 1 mole $(CHCl_3)_2$ gave, after treatment with HCl and steam distn. of volatile materials, a dark solid product yielding on distn. Ph_2CH_2 and anthracene. Similar reaction with $C_2H_2Cl_2$ gave a dark reaction product which on dry distn. yielded Ph_2CH_2 , anthracene, and Ph_3CH . Similar reaction with $C_2H_2Cl_4$ also gave a resinous product yielding on dry distn. Ph_2CH_2 and anthracene. The reaction with C_2Cl_4 gave p-xylene, Ph_2CH_2 , Ph_3CH , and anthracene. Thus the reaction tends to yield products of highly branched nature. The polymeric resinous products formed initially in the reaction are apparently essentially linear polymers built up from dihydroanthracene links, terminating in CH_3 units; the pyrolytic decompn. in dry distn. is expected to give rise to the fragments cited above. G. M. K.

KORSHAK, V. V.

USSR.

✓ High-molecular-weight compounds. XLVIII. Kinetics of reaction of polycondensation of ethanolamine with sebacic acid. G. N. Chelnukova and V. V. Korshak. *Shornik Statei Oshcheli Khim.* 2, 1070-1 (1953) (C. 48, 2622). Heating equimolar mols. of $\text{H}(\text{NC}_2\text{H}_4)_2\text{CH}_2\text{OH}$ with $\text{HO}(\text{C}_8\text{H}_{17})_2\text{CO}_2\text{H}$ at 120°, 130°, 140°, 150°, and 160° was employed in the study of kinetics of polymer formation; the reaction was followed by titration of NH_2 and CO_2H groups. The former was done with 0.1N cresolsulfonic acid in a mixt. of cresol and CHCl_3 , using cresol red indicator; the standardization of the soln. was made on a pure specimen of hexamethylenediamine adipate. The kinetic curves are reproduced. The reaction rate constant for the CO_2H groups was found to be: ($K \times 10^{-4}$ millimoles $^{-1}$ min. $^{-1}$ g. 3): at 120° 0.79, at 130° 1.2, at 140° 3.0, at 150° 4.8, and at 160° 14.0. The reaction rate consts. for the NH_2 groups are ($K \times 10^{-4}$ millimoles $^{-1}$ min. $^{-1}$ g. 3): at 120° 1.0, at 130° 2.4, at 140° 6.0, at 150° 18.0, and at 160° 29.0. Thus NH_2 groups react much more rapidly than do HO groups with CO_2H . The latter reaction is of 2nd-order with respect to HO and 3rd-order with respect to CO_2H groups. The order of reaction with respect to the NH_2 groups is undetd. since neither 1st- nor 2nd-order consts. are satisfactory. XLIX.

OUTR

D. N. Chelakova
 Purification of reaction of ethanamine with adipic acid and sebacic acid. G. N. Chelakova, V. V. Korshak, and S. R. Radkov. *Ibid.* 1975-80. Condensation of 14.0 g. $\text{HO}(\text{CH}_2)_4\text{CO}_2\text{H}$ with 12.2 g. $\text{H}_2\text{NCH}_2\text{CH}_2\text{OH}$ in 111 hr. at 150°, 2 hrs. at 160°, and 7 hrs. at 180° gave 96% completion of the reaction (by evolved H_2O), yielding a horny colorless solid, sol. in MeOH, EtOH, and H_2O . The product, $\text{C}_{12}\text{H}_{22}\text{O}_4\text{N}_2$, was identified as $\text{HO}(\text{CH}_2)_4\text{N}(\text{CO}(\text{CH}_2)_4\text{CONH}(\text{CH}_2)_4\text{OH})_2$, incapable of further reaction; pure product, m. 129° (from EtOH-Et₂O). Benzoylation with BzCl in aq. NaOH gave the di-Bz deriv., m. 141-2° (from C_6H_6). When the polycondensation was followed by titration of NH_2 and CO_2H groups it was found that at 180-90° the rate of reaction of NH_2 with CO_2H groups was 13 times greater than that of HO groups with CO_2H groups; at 119°, the ratio is only 2.8. Heating $\text{H}_2\text{N}(\text{CH}_2)_4\text{CO}_2\text{Et}$ 5 hrs. at 170-80° yielded EtOH and a polyamide with mol. wt. 3360, not described further. L. Mechanism of polycondensation of monoethanolamine with dicarboxylic acids. V. V. Korshak, G. N. Chelakova, and G. I. Distler. *Ibid.* 1278-83; cf. C.A. 39, 4532. Condensation of equimolar amts. of $\text{HOCH}_2\text{CH}_2\text{NH}_2$ with adipic and sebacic acids yields polyamidoesters (I) which are almost devoid of terminal NH_2 groups, and contain only HO and CO_2H terminal groups. Condensation of equimolar amts. of sebacic acid with $[(\text{CH}_2)_4\text{CONHCH}_2\text{CH}_2\text{OH}]_2$ gave polyamidoesters whose properties were identical with those of type I. X-ray study of both types showed periodicity of structure spaced along mol. axis at 18.9 Å, which corresponds to length of a $\text{O}(\text{CH}_2)_4\text{N}(\text{CO}(\text{CH}_2)_4\text{CO})$ unit. Exchange of units of polymer chains must involve a considerable amt. of the products, each given pair of substances representing a dynamic equilibrium.
 G. M. Kosolapoff

KORSHAK, V. V.; CHELNOKOVA, G. N. and DISTLER, G. I.

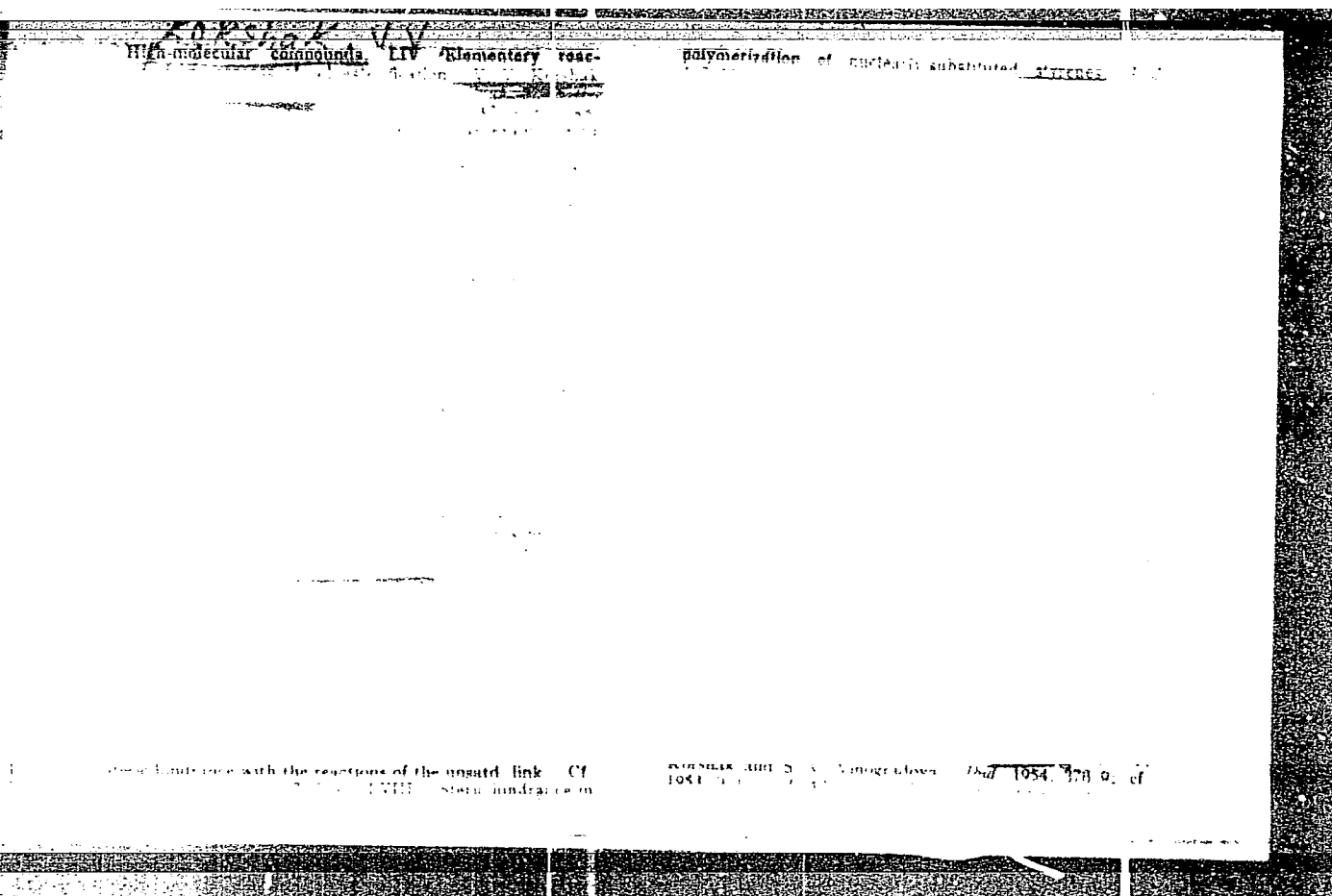
High Molecular Compounds. L. The Mechanism of Polycondensation of Monoethanol
Amine with Dicarboxylic Acids, page 1278, Sbornik Statey po obshchey khimii
(Collection of Papers on General Chemistry), Vol II, Moscow-Leningrad, 1963,
pages 1680-1686.

CHELNOKOVA, G. N., KORSHAK, V. V., AND RAFIKOV, S. R.

From the Field of High Molecular Compounds, XLIX. Reaction Characteristics of Monoethylamine With Adipic and Sebacic Acids

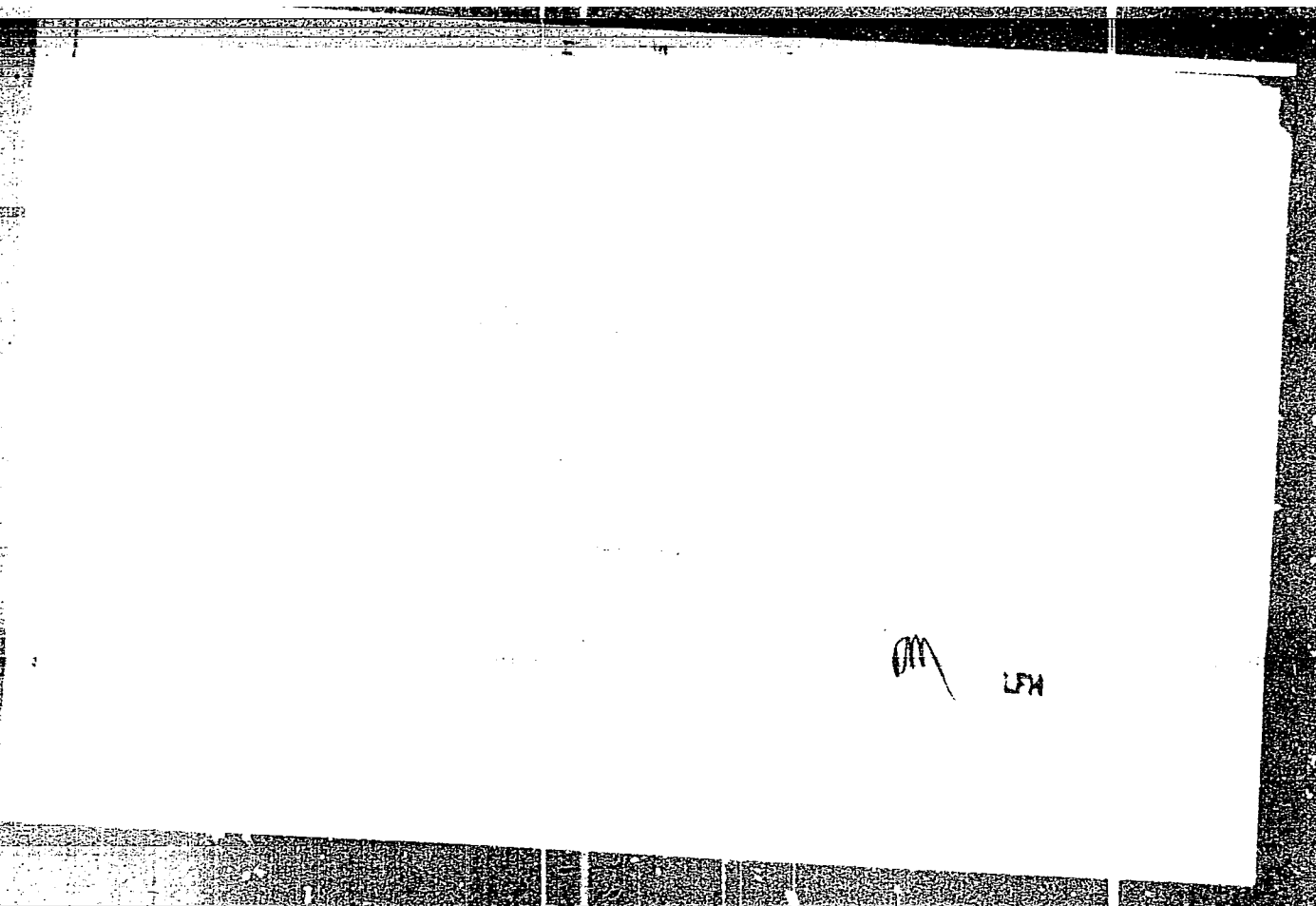
Investigated the condensation reaction of monoethylamine with adipic acid in order to clarify the reaction mechanism and the intermediate products. Also investigated the condensation of the ethyl ester of epsilon-aminocaproic acid into a polymer. (RZhKhim, No 1, 1955)
Sb. Statey po Obshch. Khimii, M.-L., Izd-vo AN SSSR, Vol 2, 1953, 1075-1080

SO: Sum. No. 744, 8 Dec 55 - Supplementary Survey of Soviet Scientific Abstracts (17)



"APPROVED FOR RELEASE: 06/14/2000

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APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000824920020-4"

KORSHAK, V. V.

Linear weight compounds LV Application of
main exchange to processes of linear poly
Rankov, Korshak, and G. N.

Linear weight compounds LV Application of
chain exchange to processes of linear poly
Rankov Korshak and G. N.
L. S. K. 1944

... large reactions
... the polyamide
... under the attack of amino or
... H₂O groups of alcs
... on heating an exten
... heterogeneous product whose
... of the polyester
... with the dicarboxylic acid
... with 17.4 g. CH₃OH and
... diglycol ester and the residue
... distillate which taken up
... solid in 25 g.
... corresponding to the diglycol ester
... 10-12 min. gave
... polyester in 38-40%
... with CH₃OH
... up to

1250) when 1% β -MgCl₂·6H₂O in BuOH extract is used and the temperature is kept at 25°C. The Bu adipate is recovered as a solid which is soluble in BuOH with a yield of 80%. The β -MgCl₂·6H₂O can be recovered with a slight loss by extraction with 20% NaOH solution. The BuOH which is used in the extraction of the β -MgCl₂·6H₂O contains about 90% water and is recycled for the extraction of the β -MgCl₂·6H₂O.

[illegible]

G. M. Kosoloff

KORSHAK, V.V.

High-molecular compounds. LVI. Influence of stereochemical factors on the ability of halosubstituted ethylenes to polymerize. V. V. Korshak and N. G. Matyeva. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1953, 344-50; cf. C.A. 48, 3012g. — The no. of halogen atoms and their nature are the 3 factors which affect polymerization tendencies of haloethylenes. The limiting group radius for tetrasubstituted ethylenes is 1.4–1.7 Å. Unsym. dihalogen. Tetrabromo-, -chloro- or -iodoethylenes do not polymerize. Addn. of 109 g. (CH_2Br) to 20 g. NaOH in 100 ml. MeOH at 55–85° gave CH_2CHBr which, passed into 38 ml. Br in 150 ml. CCl_4 and the resulting soln. washed with $\text{Na}_2\text{S}_2\text{O}_3$, gave 48.8% tribromoethane, b. 181–3°. This (133 g.), added gradually to 20 g. NaOH and 0.5 g. hydroquinone in 100 ml. MeOH at 50–60°, yielded 33% CH_2CHBr , b. 87–8°, which polymerized readily with or without added Bz_2O_2 ; the polymer is insol. in the usual solvents and decomp. 140–50°. Addn. of CH_2CHCl simultaneously with dry HCl to 10% AlCl_3 in PhNO_2 gave 44.8% MeCCl , b. 72–4°, which (15 g.) was added with cooling to 3 g. Al and 38.5 g. iodine in 100 ml. CS_2 ; treatment with aq. HCl gave 8.1% polyvinylidene iodide as a black powder, insol. and decomp. on heating. Addn. of 4.6 g. Al to 20 g. CCl_4 and 80 g. Br gave 76.95% C_2Br_4 , decomp. 200–10° (from EtOH), which, heated to 180–200°, yielded 74.7% C_2Br_4 , m. 50–1° (from EtOH). To 50 g. Ca carbide powder and 200 g. iodine were added 100 ml. C_2H_2 and, under a N stream, 120 ml. H_2O below 45°; after 1 hr. of stirring the org. layer gave 18% C_2I_4 , decomp. 192–3° [from $(\text{CICH}_2)_4$].
G. M. Kosolapoff

KORSHAK, V. V.

(2) 4

High-molecular compounds. LVII. Relation between the structure of some unsymmetrical diarylethylenes and their tendency to polymerisation. V. V. Korshak and N. G. Matveeva. (*Izvestia*, 1953, No. 3, 542-543). A polymeric diphenylene-ethylene (I) is synthesised, by heating 9-methylfluorene with KHSO_4 and a little quinol at 160-170°; the product melts at 155-165° and has a mol. wt. of 4890 from the η of its benzene solution. Stereochemical considerations explain why I polymerises, whereas 1:1-diphenylethylene only dimerises.

R. C. MURRAY.

KORSHAK, V. V.

4

High-molecular compounds. LVIII. Steric hindrance in the polymerization of nuclear-substituted styrenes. V. V. Korshak and N. G. Matveeva (*Izv. Akad. Nauk SSSR, Ser. Khim.*, 1953, No. 3, 547-553). Molecular models are reproduced to explain why there is no steric hindrance to the polymerisation of 2 : 6-dimethoxy- (I) and 2 : 4 : 6-trisopropyl-styrene (II), and why there is to that of 2 : 6-dimethyl-4-tert-butyl- and 2 : 4 : 6-tri(trifluoromethyl)-styrene. II is synthesised by converting 1 : 2 : 4-trisopropylbenzene to 2 : 4 : 6-trisopropylphenylmethylethylcarbinol, m.p. 83-84°, b.p. 126-129°/3 mm., and then dehydration; it has b.p. 165-168°/75 mm., d_4^{20} 0.9018, n_D^{20} 1.5075. The product polymerised for 4 hr. in a sealed tube at 100° has mol. wt. 10,800, and 22,700 after 2 months at room temp. I was prepared in polymeric form from 2 : 6-dimethoxyacetophenone by boiling for 2½ hr. with Al(OPr₂)₃ in the presence of abs. PrOH, and has m.p. 78-82°, mol. wt. 3080; it cannot be depolymerised.

R. C. MURRAY.

KORSHAK, V.V.; MATVEYEVA, N.G.

From the field of high molecular weight compounds. Report 59. Stereochemistry of α -methylstyrenes in connection with their capacity to polymerization. *Izv. AN SSSR. Otd. khim. nauk* no. 4: 751-756 J1-Ag '53.

(MLA 6:8)

1. Institut organicheskoy khimii Akademii nauk SSSR.
(Polymers and polymerization) (Styrenes)

KORSHAK, V.V.

USSR.

✓ High-molecular-weight compounds. LX. The role of
stereochemical factors in the polymerization process. V.V.
Korshak and N. G. Matyska. *Bull. Acad. Sci. U.S.S.R.*
Div. Chem. Sci. 1953, 991-4 (Engl. translation).—See C.A.
48, 6201z.

H. L. H.

MB JH

KORSHAK V. V.

USSR/Chemistry - High-molecular compounds.

Card 1/1 : Pub. 40 - 22/22

Authors : Korshak, V. V., and Vinogradova, S. V.

Title : From the field of high-molecular compounds. Part 62.- Polycondensation of acid esters of adipic acid and various glycols

Periodical : Izv. AN SSSR. Otd. khim. nauk 5, 951-954, Sep-Oct. 1953

Abstract : The polycondensation of acid glycol esters of adipic acid - ethylene glycol diadipinate and eicosandiol - was investigated. It was found that acid glycol esters submit to polycondensation forming poly-esters. The scheme of synthetic reactions of the poly-esterification process is explained. It was established that the growth of the poly-ester chain during poly-esterification is due not only to the reaction of the end groups activated by the reaction of straight esterification but also to the process of re-esterification promoted by the alcoholysis and acidolysis reactions. Twelve references: 11-USSR and 1-USA (1944-1953). Table.

Institution : Academy of Sciences USSR, Institute of Organic Chemistry

Submitted : November 5, 1952

KORSHAK, V. V.

(2) 3

Polyesters of eicosanediol and dicarboxylic acids. V. V. Korshak and S. V. Vinogradova. *Doklady Akad. Nauk S.S.S.R.* 89, 1017-20 (1953). — Polyesters of 1,20-eicosanediol (I) and dicarboxylic acids were obtained by direct reaction, except for esters of $(CO_2H)_2$ and $CH_2(CO_2H)_2$, which were prepd. resp. from $(CO_2Et)_2$ and $CH_2(CO_2Et)_2$. The m.ps. of I polyesters are: oxalate, 88-90°; malonate, 67-0°; succinate, 80-0°; glutarate, 77-80°; adipate, 85-7°; pimelate, 81-3°; suberate, 86-8°; azelaate, 84-7°; sebacate, 87-92°. The saw-tooth pattern of even and odd members of the series is pointed out graphically, and the lower m.ps. as compared with polyethylene is explained by greater chain flexibility in the polyesters.

G. M. Kosolapoff

Distribution of Polyamides according to molecular weight by means of ultracentrifugal sedimentation studies. Calculation of the distribution function of polyamides from sedimentation constants. S. R. Bresler, V. V. Korshak, A. Pavlova, and I. A. Vinogradov. *Dokl. Akad. Nauk SSSR* 1954, 111, 31-34. (1954) 111, 31-34. The methods and data are given on which the distribution of polyamides and the mechanism of polycondensation is based. The molecular weight distribution of polyamides and the mechanism of polycondensation is based on the experimental distribution curves compared with theoretical ones. On the basis of these data, disagreement is found. Side reactions between polymer chains and between polymer and monomer keep the molecular weight range within narrow limits. J. P. Danczy.

~~AKHSHAK, V.V.~~

BRESLER, S.Ye.; KORSHAK, V.V.; PAVLOVA, S.A.; FINOGENOV, P.A.

Experimental study of distribution functions for polyamides in relation to molecular weights, by the method of ultracentrifuge sedimentation. Report no.2. Molecular-weight distribution of polyamides and the mechanism of polycondensation. Izv.AN SSSR. Otd.khim.nauk no.2:354-361 Nr-Ap '54. (MLRA 7:6)

1. Institut vysokomolekulyarnykh soyedineniy. 2. Institut organicheskoy khimii im. N.D.Zelinskogo Akademii nauk SSSR.
(Amides) (Molecular weights)

KORSHAK, V.V.; VINOGRADOVA, S.V.

From the field of high molecular weight compounds. Report no. 61.
Reactions of the macromolecules of a polyester. Izv. AN SSSR. Otd.
khim.nauk no.2:376-379 Mr-Ap '54. (MLRA 7:6)

1. Institut organicheskoy khimii im. N.D.Zelinskogo Akademii nauk
SSSR.

(Esters) (High molecular weight compounds)

USSR/ Chemistry Decarboxylation

Card : 1/1

Authors : Korshak, V. V., and Rogozhin, S. V.

Title : From the field of high-molecular compounds. Part 61.- Decarboxylation of dicarboxylic acids during polycondensation.

Periodical : Izv. AN SSSR, Otd. Khim. Nauk. 3, 541 - 549, May - June 1954

Abstract : The effect of temperature on the process of polycondensation of ethylene glycol with oxalic, malonic, succinic, adipic and sebacic acids, was investigated. The process of decarboxylation in the presence of ethylene glycol, which in the case of oxalic and malonic acids forms no polyesters and in the case of succinic and adipic acids decreases the molecular weight of polyesters (with increase in temperature), is explained. Explanations are also given for the sharp reduction in the decarboxylation temperature and the formation of carbon dioxide which take place in the presence of glycol. Eight USSR references. Tables, graphs, drawing.

Institute : Acad. of Sc. USSR, The M. D. Zelinskiy Institute of Org. Chemistry

Submitted : March 25, 1953

USSR/Chemistry Polymerization

Card : 1/1

Authors : Korshak, V. V., and Gribova, I. A.

Title : From the field of high-molecular compounds. Part 63.- Influence of various factors on the process of combined polymerization of diisocyanates with glycols.

Periodical : Izv. AN SSSR, Otd. Khim. Nauk, 3, 550 - 561, May - June 1954

Abstract : The effect of time, temperature, concentration, ratio of initial substances and additions of mono-functional compounds on the increase in molecular weight of polyurethans, formed during combined polymerization of 4,4'-diisocyanates of diphenylmethane with tetramethylene glycol, was investigated. The results obtained are described in detail. Nineteen references: 13 USSR, 6 German. Tables, graphs.

Institution : Acad. of Sc. USSR, The N. D. Zelinskiy Institute of Org. Chemistry

Submitted : April 28, 1953

USSR/ Chemistry Organic chemistry

Card : 1/1 Pub. 40 - 13/27

Authors : Korshak, V. V., Furoshin, K. T., and Kozarenko, T. D.

Title : From the field of high molecular compounds. Part 64.- Polycondensation of ethyl ether of d,l-alanine

Periodical : Izv. AN SSSR. Otd. khim. nauk 4, 663 - 669, July - August 1953

Abstract : The polycondensation reaction of ethyl ether of d,l-alanine, was investigated at various temperatures to determine the effect of catalysts on this process. The effect of acids (including carbonic and amino acids), and bases on the rate of polycondensation reaction, is discussed. The kinetics of the polycondensation was investigated in the presence of carbonic anhydride, acetic acid, polyalanine and without the catalyst. The water-soluble products, obtained from combined polycondensation of ethyl ethers of d,l-phenylalanine and glycol, are described. Twelve references: 4 USSR; 5 German; 2 USA and 1 Swiss (1894 - 1951). Tables; graphs; diagrams.

Institution : Acad. of Sc. USSR, Institute of Organic Chemistry

Submitted : August 29, 1953

KORSHAK, V. V.

USSR/ Chemistry Physical chemistry

Card : 1/1 Pub. 40 - 14/27

Authors : Korshak, V. V., and Gribova, I. A.

Title : From the field of high molecular compounds. Part 66.- Investigation of the kinetics of copolymerization of diisocyanates with glycols

Periodical : Izv. AN SSSR. Otd. khim. nauk 4, 670 - 676, July - August 1954

Abstract : The kinetics of the copolymerization reaction of diisocyanate of diphenylmethane with tetramethyleneglycol, was investigated at 145 and 155° in a nitrobenzene solution at concentrations of 0.352 and 0.0703 mol/liter. The rate of increase in molecular weight of the polyurethan during the copolymerization process, was determined. The effect of rising temperature and increased concentration of basic substances, on the increase in molecular weight of the forming polyurethan, is explained. A new method of determining the molecular weight of polyurethans, by the final isocyanate groups, is described. Four USSR references (1946 - 1954). Tables; graphs.

Institution : Acad. of Sc. USSR, The N. D. Zelinskiy Institute of Organic Chemistry

Submitted : August 29, 1953

KORSHAK, V.V.

USSR/Chemistry - High molecular compounds

Card 1/2 Pub. 40 - 20/27

Authors : Korshak, V. V.; Vinogradova, S. V.; and Vlasova, E. S.

Title : High molecular compounds. Part 67

Periodical : Izv. AN SSSR. Otd. khim. nauk 6, 1089-1096, Nov-Dec 1954

Abstract : The characteristics of poly esters of dicarboxylic acids and certain polymethylene glycols were determined by such factors as the change in total number of methylene groups during the conversion from one homologous group member into another and by the mutual orientation of bonds, which also varies during change from acids with even number of atoms to uneven acids.

Institution : Acad. of Sc., USSR, The N. D. Zelinskiy Institute of Organ. Chemistry

Submitted : November 5, 1953

Periodical : Izv. AN SSSR. Otd. khim. nauk 6, 1978-1980, no. 1, p. 146.

Pub. 40 - 20/27

Abstract : Poly esters of dicarboxylic acid with even number of methylene groups have a higher melting point than the poly esters of dicarboxylic acid with odd number of methylene groups. The melting point of the poly ester, in benzene and alcohol was established. It was further established that the melting point of the esters depends on the number of methylene groups in the ring and their orientation. Four references: 3 USSR and 1 USA (1948-1953). Tables; graphs.

KORSHAK, V. V.

USSR/ Chemistry - High molecular compounds

Card 1/1 Pub. 40 - 21/27

Authors : Korshak, V. V.; Vinogradova, S. V.; and Vlasova, E. S.

Title : High molecular compounds. Part 68

Periodical : Izv. AN SSSR. Otd. khim. nauk 6, 1097-1102, Nov-Dec 1954

Abstract : The derivation of poly esters of diethylene glycol, triethylene glycol and propylene glycol with dicarboxylic acids is described. The effect of the structure of the basic substances on the melting point and solubility of the synthesized esters was evaluated. The effect of etheral oxygen and side chain on the properties of poly esters was investigated and it was found that the introduction of a methyl side group into the poly ester molecule produces an effect analogous to the introduction of three or four ether bonds which sharply reduces the crystallinity of the ester and the melting point and increases the solubility. Three USSR references (1953 and 1954). Table; graphs.

Institution : Acad. of Sc. USSR, The N. D. Zelinskiy Institute of Organ. Chemistry

Submitted : November 5, 1953

KORSHAK, V. V.

Subject : USSR/Chemistry AID F - 270
Card : 1/1
Authors : Korshak, V. V. and Vinogradova, S. V. (Moscow)
Title : Linear polyesters
Periodical : Usp. khim. 23, No. 3, 314-376, 1954
Abstract : The classification of polyesters; methods of preparation of linear polyesters; their characteristics and uses are reviewed. Fourteen tables. Fifty three diagrams. One flow sheet. 331 references (101 Russian); 1833-1954.
Institution : None
Submitted : No date

Translation No. 392, 21 Apr 55

KORSHAK, V.V.

USSR

Dependence of properties on the structure of the chain
in the series of polyesters of aliphatic dicarboxylic acids and
glycols. V. V. Korshak, S. V. Vinogradova, and B. S.
Vlasova. Dokl. Akad. Nauk SSSR, 1964, No. 1, p. 104.
Moscow: Doklady Akad. Nauk SSSR, 1964, No. 1, p. 104.
The authors have studied polyesters of the general type
 $\text{R}_1\text{R}_2\text{C}(\text{O})\text{OCH}_2\text{CH}_2\text{OOC}\text{C}(\text{O})\text{R}_3\text{R}_4$ in which R_1 and R_2 are alkyl groups
and R_3 and R_4 are aryl groups. The authors have shown that
the properties of these polyesters depend on the structure of the
chain. The authors have also shown that the properties of these
polyesters depend on the structure of the chain.

1. $\text{CH}_3(\text{CH}_2)_n\text{CH}_3$ (n = 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 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1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196, 1197, 1198, 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1213, 1214, 1215, 1216, 1217, 1218, 1219, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1234, 1235, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282, 1283, 1284, 1285, 1286, 1287, 1288, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1340, 1341, 1342, 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2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148,

KORSHAK, V. V.

USSR/Chemistry

Card 1/1

Authors : Korshak, V. V., Memb. Corres. of Acad. of Sc. USSR.; and Frunze, T. M.

Title : Connection between the structure of a ring and the properties of heterocyclic polyamides

Periodical : Dokl. AN SSSR, 97, Ed. 2, 261 - 264, July 1954

Abstract : The connection between the structure of a ring and the properties of heterocyclic polyamides is explained. Table is given showing the melting points of heterocyclic polyamides derived from dicarboxylic acids or amino acids with even number of methylene groups. This table also contains data on the amount of amide groups in the chain and the number of macro-molecules measured in molar percentages. An increase in the number of amide groups by 1 mol. % leads to an increase in the melting point of polyamides by 7 . The possibility of formation of hydrogen bonds is determined by the stereo chemistry of the macro-molecules. One reference. Tables graph.

Institution : Acad. of Sc. USSR, Institute of Elementary-Organic Compound

Submitted : March 22, 1954

USSR/Chemistry - Reaction processes

Card 1/1 : Pub. 22 - 27/46

Authors : Korshak, V. V., Memb. Corresp. of AN-USSR.; and Frunze, T. M.

Title : About interchange reactions between polyamide macro-molecules

Periodical : Dok. AN SSSR 97/ 4, 675-678, Aug 1, 1954

Abstract : The phenomenon of interchange reactions between macro-molecules of polyamides (di- and tri-component polyamides), was investigated. Data on the preparation of polyamides are included. It was established that the interchange reactions between polyamide macro-molecules are an integral part of the polycondensation equilibrium and apparently take place with the participation of end macro-molecule groups. The products obtained from reactions between polyamide macro-molecules, are described. Twelve USSR references (1944-1953).

Institution : Acad. of Sc. USSR, Institute of Elementary-Organic Compounds

Submitted : March 22, 1954

USSR/Chemistry - Polymerization

Card 1/1 Pub. 22 - 31/56

Authors : Petrov, A. D.; Korschak, V. V., Memb. Correspondents of Ac. of Sc. USSR.; Polyakova, A. M.; Sakharova, A. A.; Mironov, V. F.; and Nikishin, G. I.
Title : High-pressure polymerization of mono- and polyalkenylsilanes

Periodical : Dok. AN SSSR 99/5, 785-788, Dec 11, 1954

Abstract : Nineteen silico-olefines of different structure were subjected to polymerization by heating to 130° in the presence of tertiary butyl peroxide and 5500 atm pressure. The results show that under such rigid conditions the polymerizability of various alkenyl silanes and the nature of the polymers derived vary to a large extent. The reactivity of alkenyl silanes is determined by the structure of the latter and the orientation of the multiple bond relative to the Si-atom. The products, obtained through high-pressure polymerization of alkenyl silanes, are tabulated. Seven references: 5-USSR 1-USA and 1-English (1937-1953). Table; drawing.

Institution: Academy of Sciences USSR, Institute of Organic Chemistry and Institute of Elementary Organic Compounds

Submitted : June 29, 1954

KORSHAK, V. V.

"On the Reaction Mechanism of Polycondensation," a paper given at the East German Conference on Synthetic Fibers, 1955

KORSHAK V. V.

USSR/ Chemistry - High-molecular compounds

Card 1/2 Pub. 40 - 21/27

Authors : Korshak, V. V., and Frunze, T. M.

Title : High-molecular compounds. Part 69. The dependence of polyamide properties upon the number of hydrogen bonds.

Periodical : Izv. AN SSSR. Otd. khim. nauk 1, 163-171, Jan-Feb 1955

Abstract : Experiments were conducted to determine the effect of change in the number of hydrogen bonds on the properties of polyamides. It was found that because of the existing spatial hindrances a majority of the amide bonds cannot react and form hydrogen bonds which, of course, is reflected on the entire complex of physical properties of the polymer.

Institution : Acad. of Sc., USSR, The N. D. Zelinskiy Inst. of Org. Chem.

Submitted : December 12, 1953

Card 2/2 Pub. 40 - 21/27

Periodical : Izv. AN SSSR. Otd. khim. nauk 1, 163-171, Jan-Feb 1955

Abstract : Results also showed that the melting point of dicarboxylic acid polyamides with an even number of carbon atoms in the molecule varies depending upon the number of carbon atoms in the molecule varies depending upon the number of amide or hydrogen bonds. A graphical method is introduced for the determination of the number of hydrogen bonds between the molecules in mixed polyamides. Twenty-five references: 6 USA, 1 German and 18 USSR (1936-1954). Tables; graphs; drawing.

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the disclosure of which would be
in the interest of national defense.
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of sources, methods, or other information
the disclosure of which would be
in the interest of national defense.

KORSHAK V. V.

USSR/ Chemistry - High-molecular compounds

Card 1/2 Pub. 40 - 22/27

Authors : Kolesnikov, G. S.; Korshak, V. V.; and Smirnova, T. V.

Title : High-molecular compounds. Part 70. Growth of chain during polycondensation reaction in the presence of a catalyst

Periodical : Izv. AN SSSR. Otd. khim. nauk 1, 172-178, Jan-Feb 1955

Abstract : It was established experimentally that the polycondensation reaction of 1,2-dichloroethane with benzene in the presence of an $AlCl_3$ catalyst has an equilibrium and that the state of equilibrium is determined by the ratio of all basic substances involved in the reaction. Complete destruction was observed in the case of polyphenyleneethyl exposed to benzene in the presence of an $AlCl_3$ catalyst.

Institution : Acad. of Sc., USSR, The N. D. Zelinskiy Inst. Of Org. Chem.

Submitted : January 27, 1954

Card 2/2 Pub. 40 - 22/27

Periodical : Izv. AN SSSR. Otd. khim. nauk 1, 172-178, Jan-Feb 1955

Abstract : The basic rules of this destructive reaction are explained. The rate of growth of the chain, relative to the rate of destruction during the polycondensation, is described. Nine USSR references (1944-1951). Tables; graphs.

Korshak, V. V.

USSR/ Chemistry - Organic chemistry

Card 1/1 Pub. 40 - 23/26

Authors : Kolesnikov, G. S.; Korshak, V. V.; and Fedorova, L. S.

Title : From the field of high molecular compounds. Part 71. Polycondensation of 1,2-dichloroethane with chlorobenzene in the presence of $AlCl_3$.

Periodical : Izv. AN SSSR. Otd. khim. nauk 2, 359 - 364, Mar-Apr 1955

Abstract : The process of polycondensation of 1,2-dichloroethane with chlorobenzene was investigated and the basic laws governing this condensation process were established. It was found that the introduction of a Cl atom into the benzene ring hampers the formation of the trimeric polycondensation products. The structures of reaction products obtained over $AlCl_3$ contacts are described. Seven references: 5 USSR, 1 USA and 1 German (1916-1955). Tables; graphs.

Institution : Acad. of Sc., USSR, The N. D. Zelinskiy Inst. of Organ. Chem.

Submitted : January 27, 1954

Korshak, V. V.

USSR/ Chemistry - Organic chemistry

Card 1/1 Pub. 40 - 24/26

Authors : Korshak, V. V.; Kolesnikov, G. S.; and Soboleva, T. A.

Title : From the field of high molecular compounds. Part 72. Formation of a trimer during the reaction of polyphenyleneethyl with dihalogeno alkanes

Periodical : Izv. AN SSSR. Otd. khim. nauk 2, 365 - 371, Mar-Apr 1955

Abstract : The reaction between polyphenyleneethyl and various dihalogeno alkanes leading to the formation of trimeric products was investigated in the presence of anhydrous $AlCl_3$. It was established experimentally that the formation of the trimer, occurring during the synthesis of trimeric products from an artificially composed mixture of polyphenylene ethyls of various molecular weight, consumes most of the high molecular part of the polymer mixture. It is shown that the conversion of a linear polymer into a trimetric one is followed by a kind of "joining" of the macromolecules. Fourteen USSR references (1945-1953). Tables; graphs.

Institution : Acad. of Sc., USSR, The N. D. Zelinskiy Inst. of Organ. Chem.

Submitted : January 27, 1954

KORSHAK, V. V.

USSR/ Chemistry - Organic chemistry

Card 1/1 Pub. 40 - 25/26

Authors : Korshak, V. V., and Frunze, T. M.

Title : From the field of high molecular compounds. Part 73. About certain di-component mixed polyamides

Periodical : Izv. AN SSSR. Otd. khim. nauk 2, 372 - 379, Mar-Apr 1955

Abstract : Investigation was conducted to determine the physico-chemical properties of certain binary mixed polyamide systems synthesized from caprolactam and salts of hexamethylenediamine mixed with adipic, azelamino or sebacic acids. At a ϵ -caprolactam content of 80 mol/% the systems investigated appeared to have a very low melting point. The mechanism of the reaction leading to the formation of mixed polyamides for systems containing ϵ -caprolactam is explained. Thirty-one references: 21 USSR, 7 German, 2 USA and 1 French (1896-1954). Table; graphs.

Institution : Acad. of Sc., USSR, The N. D. Zelinskiy Inst. of Organ. Chem.

Submitted : February 10, 1954

KORSHAK, V.V.; FRUMKE, T.M.

High molecular weight compounds. Report 77. Relation of properties of aliphatic polyamides with even rings to the ring structure. Izv. AN SSSR, Otd. khim. nauk no. 4: 756-761, J1-Ag '55. (MLRA 9:1)

1. Institut organicheskoy khimii imeni N.D. Zelinskogo Akademii nauk SSSR.

(Amides)

KORSHAK, V.V.; FRUNZE, T.M.

High molecular weight compounds. Report no.78. Relation of properties of aliphatic polyamides with odd rings to the ring structure. Izv. AN SSSR. Otd.khim.nauk no.4:762-765 J1-Ag '55. (MLRA 9:1)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo Akademii nauk SSSR. (Amides)

KONSHAK, V.V.

The reaction mechanism of polycondensation. V. V. Konshak. *Fiziko-khimiya*, n. 6, 211-21, 1961. The role of the various single reactions, especially the degradation reactions, in the polycondensation process with the formation of polyesters, amides, sulfoxides, alkylates, anhydrides, and others is discussed. A formula for the polymer distribution corresponding to the mol.-wt. groups is presented according to which the polycondensation products are comparatively little polydispersed. F. E. Bauman.

11/15/61

KORSHAK, V.V.

✓ High-molecular weight compounds. LXXIX. Products of polycondensation of dialdehydes and diamines with diamines and glycols. V. V. Korshak and S. V. Vinogradova (Inst. Hetero-org. Compds., Moscow). *Izv. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1955, 925-9; cf. C.A. 45, 1513f; 50, 2247f. — Condensation of $(CH_2)_6(NH_2)_4$ at 180° with dicarbonyl compds. gave condensation products, apparently including C:N bonds (not specifically detd.). With $p-C_6H_4(CHO)_2$ the product formed was a reddish solid, m. 183-92°, insol. in the usual solvents; the product from Ac_2O was a dark infusible solid, sol. in $EtOH-CHCl_3$, that from CH_2O a red viscous mass, and that from $AcCO_2H$ a dark solid, sol. in $EtOH-CHCl_3$, m. 78-85°. All of them have relatively low mol. wts. $(CH_2OH)_2$ with $p-C_6H_4(CHO)_2$ gave no polymer, yielding only $p-C_6H_4CH(OCH_2CH_2O)_2$, m. 78-80°. The dialdehyde with $(CH_2)_6(OH)_4$ gave a tridimensional polymeric polyacetal, an elastic rubbery solid; addn. of C_6H_5OH to the reaction mixt. still gave a tridimensional product. LXXX. A case of migrational copolymerization. *Ibid.* 930-3. — Heating 1:1 or 1:0.5 mixts. of $(CH_2)_6(NH_2)_4$ and $(CH_2)_6OCCMe:CH_2$, of $(CH_2)_6(NH_2)_4$ and $(CH_2)_6OCCMe:CH_2$, and of $(CH_2)_6(NH_2)_4$ and $(CH_2)_6OCCMe:CH_2$ in ampuls under N in the presence of hydroquinone up to 80 hrs. at 50°, 110°, and 150°, resulted in formation of transparent plastic condensation products, which tended to become more difficultly sol. after longer reaction periods and higher temps. of condensation. Similar condensations were run with $(CH_2OH)_2$ or $(H_2N-$

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V. V. Korshak

High Molecular Weight Compounds

$\text{CH}_3\text{CH}_2\text{CHOH}$ in binary mixts. with $(\text{CH}_3)_2\text{C}(\text{CO}_2\text{Me})\text{CH}_2$ or $(\text{CH}_3)_2\text{C}(\text{CO}_2\text{H})\text{CH}_2$. The reaction products formed in these combinations of reactants are explained by migrational copolymerization, i.e. polymerization with transfer of a H atom in each link of reaction. In the reactions with the diamine, the product is the result of addn. of the NH link

across the terminal double bonds of the unsatd. ester; the 2nd H atom of the amino group enters the reaction after longer reaction time and at higher temp. than the 1st H atom. LXXXI. Mixed polyamides containing glutaric and pimelic acids. V. V. Korshak and T. M. Brunze. *Ibid.* 934-41. Binary systems were studied contg. compds. of mixed polyamides from salts of $(\text{CH}_2)_4(\text{NH}_2)_2$ with glutaric or pimelic acids, the 2nd components being similar salts of adipic, azelaic, or sebacic acids. The m.ps. of the resulting polyamides are shown graphically. These systems have a min. m.p. at 60 mole-% of the component contg. an odd no. of C atoms in the mol. The nos. of possible cross-linking H bonds in such products can vary considerably, depending on the phys. disposition of the proximate macromols. of the polyamides. Cold drawing of such products increases their mech. strength by improving the probability of geometric alignment which permits interchain H bonding. LXXXII. 2,4,5-Trisopropyl- α -methylstyrene. V. V. Korshak and N. G. Matveeva. *Ibid.* 942-4. To 30 g. 1,2,4- $\text{C}_6\text{H}_3(\text{CH}(\text{Me})_2)_3$, 15 g. AlCl_3 and 100 ml. $(\text{CHCl}_3)_2$ was gradually added 25 g. AlCl_3 with cooling, and the mixt. kept overnight, heated 1 hr. on a steam bath, and treated with dil. HCl, yielding 62.1% 2,4,5-(Me_2CH) $_3\text{C}_6\text{H}_2\text{Ac}$, bp 156-62°/m. 106-7°. This (20 g.), 40 g. MeI, 18 g. powd. Na, and

$$\frac{2}{3}$$

V. V. Korshak 8

High Molecular Weight Compounds

200 ml. Et_2O were treated with 1 ml. EtOH to start the reaction, after termination of which the mixt. was heated on a steam bath 1-1.5 hrs., decanted from the Na, treated with Et_2O and the ether soln. of the desired alcoholate treated with H_2O and exhd. with H_2O ; distn. gave 2,4,5-(*Me*-*CH*)₃-*C*₆*H*₂-*C**Me*: *CH*, b. 110-111°. *d*₄ 0.893, *n*_D 1.4870. The substance could not be induced to polymerize either by radical (H_2O_2) or ionic initiators (AlCl_3). Thus a *Me* group on the vinyl group hinders polymerization more than do two *o*-*Me* groups on the benzene ring. Cf. *C.A.* 43, 3788d.

G. M. Kosslapoff

27/02

435

KORSHAK, V.V.; VINOGRADOVA, S.V.

High molecular weight compounds. Part 80. A case of migrational copolymerisation. *Izv. AN SSSR. Otd. khim. nauk* no.5:930-933 S-O
'55. (MLA 9:1)

1. Institut elementoorganicheskikh soedineniy Akademii nauk SSSR.
(Polymers and polymerisation)

KORSHAK, V.V.; FRUMER, T.M.

High molecular weight compounds. Part 81. Mixed polyamides derived from glutaric and pimelic acids. Izv.AN SSSR.Otd.khim.nauk no.5: 934-941 S-O '55. (MIRA 9:1)

1.Institut element'organicheskikh soedineniy Akademii nauk SSSR.
(Amides)

KORSHAK, V.V.; MATVEYEVA, N.G.

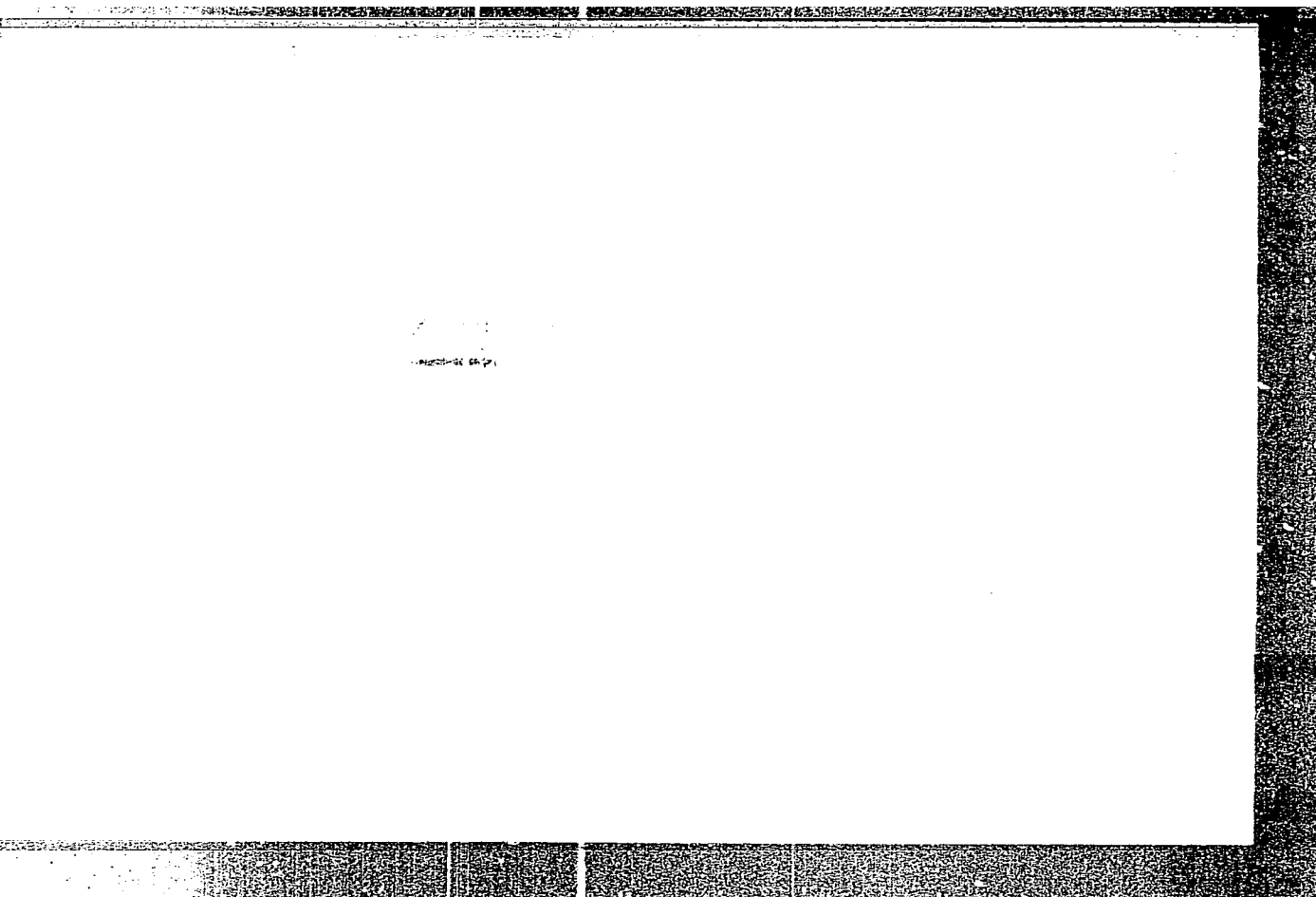
High molecular weight compounds. Izv. AN SSSR, Otd. khim. nauk no. 5:
942-944 S-O '55. (MLRA 9:1)

1. Institut elementoorganicheskikh soedineniy Akademii nauk SSSR.
(Styrene)

High molecular weight compounds
of polycyclopentadiene

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000824920020-4



APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000824920020-4"

KORSHAK, V.V.

Subject : USSR/Chemistry AID P - 3426

Card 1/1 Pub. 152 - 11/18

Authors : Korshak, V. V. and A. A. Ivanova

Title : Dehydration of methyl ricinoleate

Periodical : Zhur. prikl. khim., 28, 5, 523-532, 1955

Abstract : Experiments were carried out in the presence of various catalysts of which sodium bisulfate was the most active. The dehydration of methyl ricinoleate in the presence of NaHSO_4 attains 86.59% at 250°C . Seven tables, 11 references, 7 Russian (1914-1950).

Institution : None

Submitted : S 9, 1953

KOLESNIKOV, G.S.; KORSHAK, V.V.; SOBOLEVA, T.A.

High molecular weight compounds. Part 84. Polycondensation of
1,2-dichloroethane with teluene. Izv.AN SSSR Otd.khim.nauk 86
no.6:1095-1099 My '55. (MLRA 9:4)

1.Institut elementorganicheskikh soedineniy Akademii nauk SSSR.
(Ethane) (Teluene)

KOLESNIKOV, G.S.; KORSHAK, V.V.

High molecular weight compounds. Part 85. The polycondensation of
1,2-dichloroethane with o-dichlorobenzene. Izv.AN SSSR.Otd.khim.
nauk 86 no.6:1100-1106 My '55. (MLRA 9:4)

1.Institut elementeorganicheskikh soedineniy Akademii nauk SSSR.
(Methane) (Benzene)

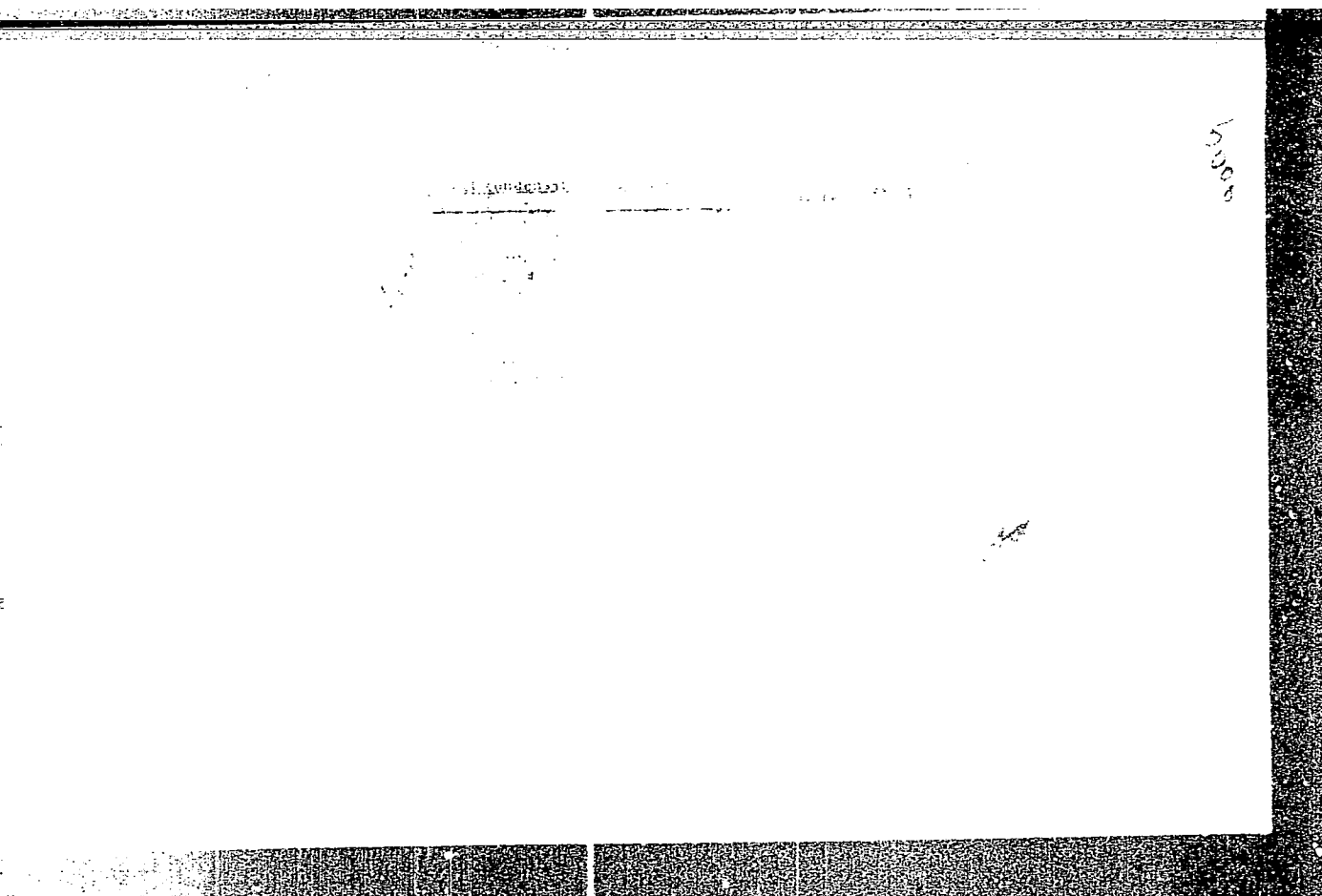
KORSHAK, V.V.; PAVLOVA, S.A.

High molecular weight compounds. Part 86. Determination of the molecular weights of polyamides by the viscosity of their solutions in cresol and methanol. Izv. AN SSSR, Otd. khim. nauk 86 no. 6: 1107-1111 My. '55. (MIRA 9:4)

1. Institut elementeorganicheskikh soedineniy Akademii nauk SSSR.
(Molecular weights) (Amides)

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NORSHAK, V. V.

582

chem ✓ (A) Properties of mixed polyamides obtained by polycondensation of binary systems. (a) Multicomponent mixed polyamides. V. V. Norshak and T. M. Frunze (Dokl. Akad. Nauk SSSR, 1955, 135, 623-626, 843-846). (2) The m.p. of polyamides prepared from binary mixtures of the acids $[\text{CH}_2]_n(\text{CO}_2\text{H})_2$ (n is 2-8) with $[\text{CH}_2]_m(\text{NH}_2)_2$ pass through a min. when the mixtures contain 60 mol.-% of the acid with higher n ; the min. are lower for acids of odd than of even n . For polyamides prepared from amino-acids $\text{NH}_2[\text{CH}_2]_n\text{CO}_2\text{H}$ (n is 5, 6, 8, and 11), alone or with a dicarboxylic acid-diamine system, min. m.p. are encountered with 40-60 mol.-% of amino-acid, and for dicarboxylic acid-aromatic diamine systems min. m.p. are at 60-80 mol.-% of diamine [2 : 4-diaminotoluene or *o*-, *m*-, and *p*-phenylenediamine]. (b) The polyamides prepared from the ternary systems (a) mixtures of $\text{NH}_2[\text{CH}_2]_n\text{NHCO}[\text{CH}_2]_m\text{CO}_2\text{H}$, where n is 4, 7, and 8, (b) mixtures of $\text{NH}_2[\text{CH}_2]_n\text{NHCO}[\text{CH}_2]_m\text{CO}_2\text{H}$ (I) where n is 4 and 7 with $\text{NH}_2[\text{CH}_2]_p\text{CO}_2\text{H}$ (II) (p is 5), (c) mixtures of I (n is 7 and 8) with II (p is 10), and (d) mixtures of $\text{NH}_2[\text{CH}_2]_n\text{NHCO}[\text{CH}_2]_m\text{CO}_2\text{H}$ with $\text{NH}_2[\text{CH}_2]_p\text{CO}_2\text{H}$ (p is 5 and 6), have the lowest m.p. when the constituents are mixed in about equimol. proportions.

R. TRUSCOE.

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KORSHAK, V.V.; FRUNZE, T.M.

Multi-component mixed polyamides. Dokl.AN SSSR 103 no.5:843-846
Ag '55. (MLRA 9:1)

1.Chlen-korrespondent AN SSSR (for Korshak).2.Institut elemento-
organicheskikh soyedineniy Akademii nauk SSSR.
(Amides)

KORSHAK, V. V.

USSR/ Chemistry - Molecular compounds

Card 1/1 Pub. 40 - 17/25

Authors : Korshak, V. V.; Frunze, T. M.

Title : High molecular compounds. Part 87. Mixed polyamides containing certain amino acid radicals

Periodical : Izv. AN SSSR. Otd. khim. nauk 1, 98-102, Jan 1956

Abstract : An investigation was conducted to determine the characteristics of mixed binary polyamides obtained from ω -aminoanthric, ω -aminopelargonic or ω -aminoundecanic acids and hexamethylenediamine salts of such dicarboxylic acids as adipic, azelaic or sebacic. The reaction leading to the formation of mixed polyamides is described. Six references: 3 USSR, 1 Swiss, 1 Germ. and 1 USA (1929-1955). Table; graphs.

Institution : Acad. of Sc., USSR, Inst. of Organoelemental Compounds

Submitted : August 18, 1954

USSR/ Chemistry - Molecular compounds

Card 1/1 Pub. 40 - 18/25

Authors : Korshak, V. V., and Chelnokova, G. N.

Title : High molecular compounds. Part 88. Polyamides having ether bonds in the macromolecule chain

Periodical : Izv. AN SSSR. Otd. khim. nauk 1, 103-107, Jan 1956

Abstract : The derivation of polyamides from diglycolic acid and hexamethylenediamine is described. Mixed polyamides were also obtained from ϵ -carbolactam and salts of di-(gamma-aminipropyl) ether of ethylene glycol with adipic acid and from salts of adipic acids with hexamethylenediamine at various ratios of the basic substance. It was established that the addition of ethereal oxygen to the polyamide macromolecule chain leads to a reduction in the melting point and to an increase in solubility in comparison with polyamides having no ether bonds. The properties of the polyamides are listed. Six references: 1 USA, 3 USSR, 1 Germ., and 1 Eng. (1905-1955). Tables; graphs.

Institution : Acad. of Sc., USSR, Inst. of Organoelemental Compounds

Submitted : August 18, 1954

USSR/ Chemistry - Molecular compounds

Card 1/1 Pub. 40 - 19/25

Authors : Korshak, V. V.; Frunze, T. M.; and Dikareva, T. A.

Title : High molecular compounds. Part 89. Tri-component mixed polyamide systems containing amino acids

Periodical : Izv. AN SSSR. Otd. khim. nauk 1, 108-113, Jan 1956

Abstract : Ternary mixed polyamide systems containing ω -aminoanthric, ω -amino-pelargonic or ω -aminoundecane acids and salts of hexamethylenediamine with adipic, azelaic or sebacic acids as well as ϵ -carbolactam in various combinations, were investigated. It was found that products with lowest melting points and maximum solubility have average compositions and are oriented in the central part of the diagram. The products containing carbolactam in addition to the amino base acids were found to be different from the carbolactamless products. Three USSR references (1955). Tables; diagrams.

Institution : Acad. of Sc., USSR, Inst. of Organoelemental Compounds

Submitted : August 18, 1954

USSR/ Chemistry - Molecular compounds

Card 1/1 Pub. 40 - 20/25

Authors : Kolesnikov, G. S.; Korshak, V. V.; Andreyeva, M. A.; and Kitaygorodskiy, A. I.

Title : High molecular compounds. Part 90. Polycondensation of 1,2-dichloroethane with tetralin

Periodical : Izv. AN SSSR. Otd. khim. nauk 1, 114-119, Jan 1956

Abstract : The polycondensation of 1,2-dichloroethane with tetralin was investigated in the presence of aluminum chloride and the basic laws governing this polycondensation process were established. On the basis of x-ray analysis it was determined that 1,2-di-(beta-tetralyl) ethane is the product obtained during the initial polycondensation stages. The formation of three-dimensional polycondensation products was observed in spite of the fact that the potential function of tetralin is only 4. The effect of benzene-solution concentrations of polytetralylenethyl on the polymer molecule association is discussed. Seven references: 5 USSR and 2 Germ. (1921-1955). Tables; graph.

Institution : Acad. of Sc., USSR, Inst. of Organoelemental Compounds

Submitted : November 18, 1954

High molecular weight compounds
from the polycondensation of
the monomers of the type
the monomers of the type
Effect of catalyst concentration on the
polymerization of the monomers
of the type
Properties of the polymers
of the type
and pentamethylene
and pentamethylene
and pentamethylene
and pentamethylene

KOLESNIKOV, G.S.; KORSHAK, V.V.

High molecular weight compounds. Part 92. Effect of the catalyst concentration on the transarylation of 1,2-diphenylethane. Izv. AN SSSR Otd.khim.nauk no.2:239-242 F '56. (MIRA 9:7)

1. Institut elementeorganicheskikh soedineniy Akademii nauk SSSR.
(Bibenzyl) (Catalysts)

Korshak, V.V.

POLYAKOVA, A.M.; KORSHAK, V.V.; SAKHAROVA, A.A.; PETROV, A.D.; MIRONOV, V.F.;
NIKISHIN, G.I.

Polymerization and copolymerization of alkenylsilanes under high
pressure. Part 2. Izv. AN SSSR. Otd.khim. nauk no.8:979-985 Ag '56.
(MLRA 9:10)

1. Institut elementoorganicheskikh soedineniy Akademii nauk SSSR
i Institut organicheskoy khimii imeni N.D. Zelinskogo Akademii
nauk SSSR.

(Polymers and polymerization) (Silane)

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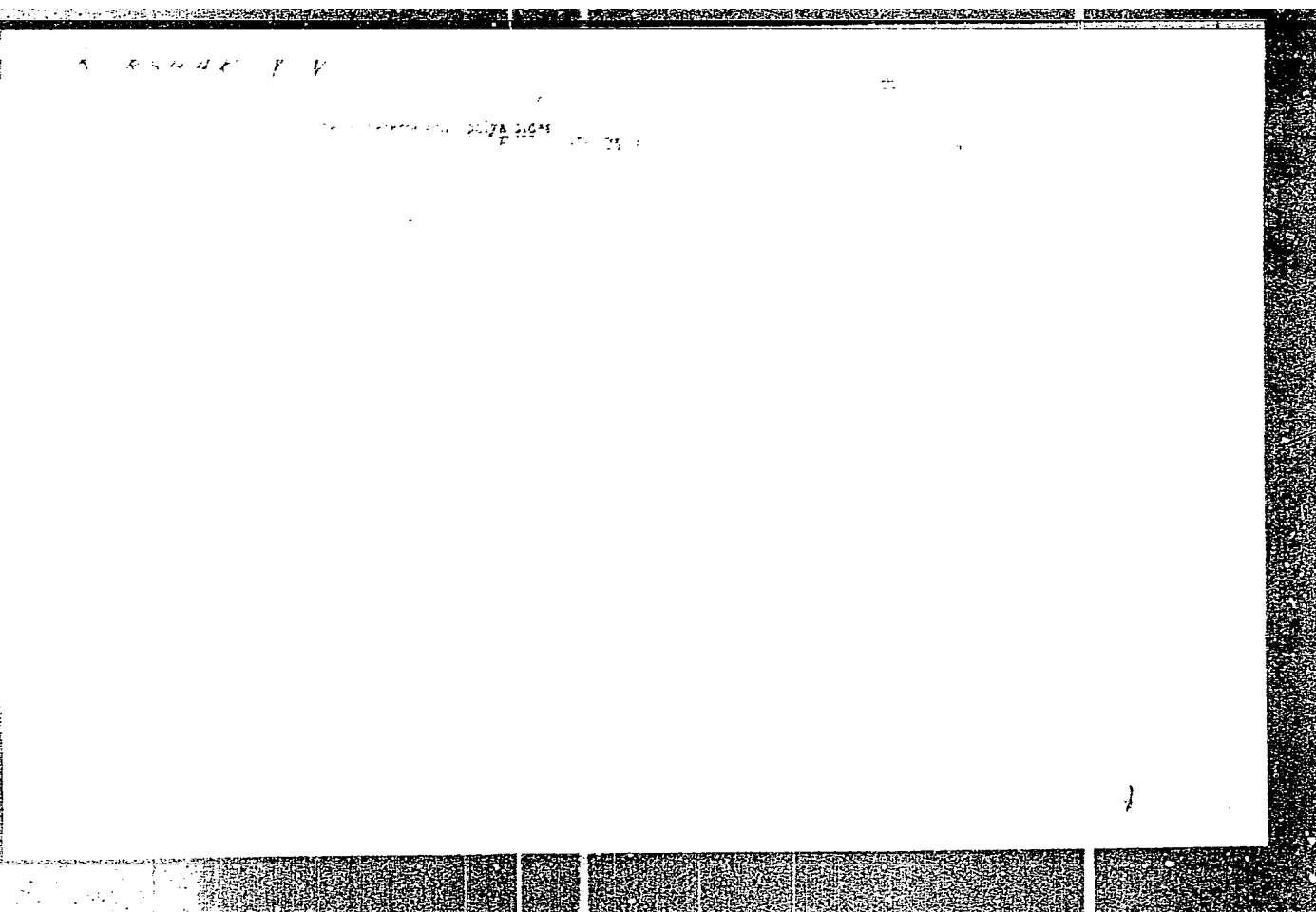
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KORSHAK, V.V.; VINOGRADOVA, S.V.

High molecular weight compounds. Part 93. Properties of polyesters of tetramethyleneglycol and butanediol-1,3. Zhur.ob.khim. 26 no.2: 539-544 F '56. (MLBA 9:8)

1. Institut elementoorganicheskikh soedineniy Akademii nauk SSSR. (Butanediol) (Esters)

* KORSHAK, V.V.; VINOGRADOVA, S.V.

High molecular weight compounds. Part 94. Polyesters of trimethylene and pentamethylene glycols. Zhur.ob.khim. 26 no.2:544-548
F '56. (MLBA 9:8)

1. Institut elementoorganicheskikh sovedineniy Akademii nauk SSSR.
(Propanediol) (Pentenediol) (Esters)

KORSHAK, V.V.; VINOGRADOVA, S.V.

High molecular weight compounds. Part 95. Polyesters of thiodi-
valeric acid. Zhur.ob.khim. 26 no.3:732-735 Mr '56. (MLRA 9:8)

1. Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR.
(Valeric acid)